REMARKS

I. Status of Claims:

Claims 136-139, 141, 164-175 and 195-266 are pending in the application; Claims 136-139, 164-175, 195-210, 212-214, and 237-266 are allowed; Claims 211 and 215-233 are objected to; and Claims 141 and 234-236 are rejected. By way of this amendment, Claim 141 has been amended, and new Claims 267-273 have been added. Support for the amendments and the newly added claims can be found in the specification and in the claims as originally filed. No new matter has been added.

II. Claim Rejections – 35 USC 102:

Claims 141, and 234-236 stand rejected under 35 USC 102(e) as being anticipated by US 2004/0223221A1 to Sugimura et al. ("Sugimura") as set forth in the Action at pages 2 and 3. Applicants respectfully traverse this rejection.

A. Remarks Related to Sugimura et al.

Sugimura et al. discloses a polarizing plate comprising a thermoplastic support layer, a non-polyvinyl alcohol based polarizing film attached to the thermoplastic support layer, and a protective layer bonded to the polarizing film. The thermoplastic support layer and the thermoplastic protective layer is affixed to the polarizing film using adhesive (see Sugimura at paragraph [0066]). The multi-layer laminated polarizing plate is incorporated into a plastic optical article suing an injection molding method, where the optical plastic base material (i.e., the ophthalmic element substrate material) "is always molded onto the support layer of the polarizing plate." (See Sugimura at paragraph [0020].) In other words, the polarizing film is *not* in contact with the exterior surface of the ophthalmic element (i.e., the ophthalmic element substrate).

Further, according to Sugimura et al., the polarizing film is one of the following:

(a) a polarizing film based on a copolymer of PVA and polyvinylene or a blend of PVA and polyacetylene, **in which the polarizing elements are the polyvinylene units** (i.e., a K-sheet type polarizer);

(b) a polarizing film **based on a hydrophobic polymer doped with a water insoluble dichroic dyes**, in which the polarizing elements are the dichroic dyes;

(c) a polarizing film **based on a liquid crystalline polymer doped with dichroic dyes**, in which the polarizing elements are the dichroic dyes; or

(d) a polarizing film **based on a thin film of dichroic dye crystals**, in which the polarizing elements are the dichroic dyes. *See* Sugimura et al. at page 2, paragraphs [0028]-[0032].

With respect to polarizing films that Sugimura et al. discloses as employing dichroic dyes as the polarizing elements (i.e., options (b), (c), and (d) above), Sugimura et al. discloses that polarizing films based on a hydrophobic polymer doped with a water insoluble dichroic dyes (i.e., option (b) above) may be formed by melting a polymer (such as PET) together with a dichroic dye, forming the melt into a film or sheet, and finally stretching the sheet to align the dye. *See* Sugimura et al. at page 3, paragraph [0038].

With respect to option (c) above, Sugimura et al. discloses that polarizing films based on liquid crystalline polymers doped with dichroic dyes may be formed by a process similar to that described above with respect to option (b), except that stretching of the polymer sheet is not needed. *See* Sugimura et al. at page 3, paragraph [0039]. Examples of suitable polarizing LCP films disclosed in Sugimura et al. include those described in the disclosures of U.S. Patent Nos. 5,738,803 and 5,746,949, (which disclosures Sugimura et al. incorporates by reference).

Both the '803 Patent and the '949 Patent disclose methods of making LCP films **by extruding a LCP and dichroic dye into a sheet**. In the '803 Patent, the dichroic dye is mixed with the LCP prior to extrusion, while in the '949 Patent, the dichroic dye is part of the repeat unit of the main chain of the LCP. According to these patents, stretching of the extruded sheets is not required because the liquid crystal polymer chains are oriented during extrusion, thereby rendering the sheet anisotropic and suitable for polarizing film applications (*See e.g.*, The '803 Patent at col. 2, lines 4-8).

At paragraph [0041], Sugimura et al. discloses that polarizing films based on thin films of dichroic dye crystals (i.e., option (d) above) can be made from dichroic dyes that are applied on the surface of a rigid or flexible substrate to form a "layer of a dye crystalline grid." Further, according to Sugimura et al., **"[t]he polarizing ability of such film is achieved by *mechanically orienting* the dichroic dye that is coated on the substrates surface** from a solution and subsequently drying under the conditions causing ordered crystallization of the dichroic dye." Sugimura et al. incorporates by reference the disclosure of U.S. Patent No. 6,563,640 for examples of methods of making such films.

The '640 Patent discloses that thin films of dichroic dye crystals can be formed from *dichroic organic substances that form liquid crystals in 4-30% solutions*. *See* The '640 Patent at col. 6, lines 48-50. That is, when formed into a solution at an appropriate

concentration, ***the dichroic dyes themselves form a lyotropic liquid crystal solution***. Further, according to the '640 Patent, the liquid crystalline dichroic dye solution may be formed into an oriented coating by applying the solution on to a substrate and orienting the dichroic dyes *during crystallization of the dye from the solution,* for example, using an electromagnetic field or the anisotropy of the substrate on which crystallization is performed. *See* The '640 Patent at col. 7, lines 55-60. Alternatively, as disclosed in the '640 Patent, after applying the liquid crystalline dichroic dye solution to a substrate, the dye solution can be ***mechanically ordered*** **(the process apparently contemplated by Sugimura et al.) and dried under conditions causing ordered crystallization of the dye.** *See* The '640 Patent at col. 7, lines 65-67. For example, the substrate with the dye solution applied thereto may be moved during drying as illustrated in Example 1 of the '640 Patent.

Further, as discussed in the '640 Patent, the crystal structure of at least a part of the resultant film is *a three-dimensional crystalline lattice formed by the molecules of at least one dichroic organic substance*. *See* The '640 Patent at col. 2, line 66 to col. 3, line 1.

Claim 141 has been amended to recite a method of making an ophthalmic element where imparting the orientation facility on the exterior surface of the ophthalmic element comprises applying an at least partial *coating* including an alignment medium to the exterior surface of the ophthalmic element and at least partially ordering at least a portion of the alignment medium, and subsequently forming an at least partial coating adapted to polarize transmitted radiation on at least a portion of the orientation facility (i.e., on the coating comprising the alignment medium). Clearly, with this amendment, claim 141 is not anticipated by Sugimura. Reconsideration and withdrawal of the rejection under 35 USC 102(e) based on Sugimura are respectfully requested.

While Sugimura et al. discloses method of forming polarizing plates using *polarizing films formed from liquid crystal polymer <u>sheets</u> comprising dichroic materials* and polarizing films made from lyotropic liquid crystal solutions of dichroic dyes applied on the surface of the substrate to form a <u>layer of dye crystalline grid</u> *(i.e., a three-dimensional crystalline lattice formed by the molecules of at least one dichroic organic substance),* Sugimura et al. <u>*does not*</u> disclose or suggest a method of forming ophthalmic element comprising imparting at least one orientation facility on at least a portion of at least one exterior surface of an ophthalmic element by applying an at least partially stretched polymer sheet to the at least a portion of the at least one exterior surface of the ophthalmic element and subsequently forming an at least partial coating adapted to polarize at least transmitted radiation on at least a portion of the at least one orientation facility, *wherein the at least*

partial coating adapted to polarize at least transmitted radiation comprises a thermotropic liquid crystal material and a dichroic material, much less a method wherein *the coating adapted to polarize at least transmitted radiation comprises a thermotropic liquid crystal material that is at least partially aligned with at least a portion of the at least partially stretched polymer sheet and a dichroic material that is at least partially aligned with at least a portion of the at least partially aligned thermotropic liquid crystal material* as recited by claim 267.

With respect to new claims 268 and 269, as explained above, Sugimura et al. does not disclose or suggest a method of forming a *coating comprising a thermotropic liquid crystal material and a dichroic dye on a substrate.* Thus, there is no discussion or suggestion in Sugimura et al. of a method of forming such a coating by either applying a thermotropic liquid crystal material and a dichroic dye onto at least a portion of an at least partially stretched polymer sheet and aligning at least a portion of the thermotropic liquid crystal material with at least a portion of the at least partially stretched polymer sheet or applying a thermotropic liquid crystal material onto at least a portion of an at least partially stretched polymer sheet, aligning at least a portion of the thermotropic liquid crystal material with at least a portion of the at least partially stretched polymer sheet, and imbibing a dichroic dye into at least a portion of the at least partially aligned thermotropic liquid crystal material.

New claims 270-273 are dependent from claim 141 now amended which is believed to be novel over Sugimura as discussed above, and recite specific additional coatings. Support for these new claims can be found in original claim 235 and in the specification as originally filed, for example at paragraph [0070].

In view of the foregoing amendments and remarks, Applicants assert that the application now is in condition for allowance.

Respectfully Submitted,

Date: March 28, 2006

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